

EFFECTS OF OVARIAN AND PLACENTAL LIPOIDS ON UTERINE MUSCLE AND AUTONOMIC NERVES

It has long been suspected that the therapeutic virtues of sex organ products are not limited to effects on the strictly glandular portions of the sex organs, or to the mediation of changes through them. The administration of the dried, powdered products and extracts from them is reported clinically to increase the sense of well-being, the mental stability, the appetite, muscular power, and to improve the circulation, and the autonomic nerve balance. All the symptoms of menopause may be inhibited and a sort of rejuvenation occur at least temporarily. The benefits derived may be only the consequence or accompaniment of improved sexual vigor which appears also to be increased, and again a general improvement may occur independently of any demonstrable changes in sex function.

The responses are capricious and sufficiently irregular and inconstant to have caused as much condemnation as approval of the products. The irregular and inconstant effects may be due to weak, improperly prepared or fraudulent products, and there is as yet no reliable standard by which to judge the general effects. Satisfactory analysis in man is difficult, if not impossible, and unfortunately the clinical reports that exist are almost devoid of controls with other tissue products and the results rendered useless. Here, as so often in other problems, there is no satisfactory substitute for animal experiment.

Recently, Miura of the Pharmacological Institute in Freiburg has made a successful investigation, and demonstrated the efficacy of ovarian and placental extracts in rabbits along promising lines. The products used consisted of the lipoidal constituents in these organs, cholesterol probably being strongly represented. Miura injected daily doses of from 0.2 to 0.3 gm. (total 1.1 to 2.2 gm.) of the crude oily products hypodermically during periods of from seven to fourteen days in young virgin rabbits of about 500 gms. body weight. At the end of this time the uterus was markedly hypertrophied, appearing several times larger than the normal control organ. This was confirmative of the older results of Herrmann. Miura states nothing regarding the size of other organs. More important than the hypertrophy, however, was the altered functional activity of muscle and autonomic nerves in the uterus.

This altered functional state of the nerves and muscle was demonstrated pharmacologically by Miura. That is, he showed that the responses of the uterine horns to the classical autonomic drugs after injection of the ovarian or placental lipoids were increased. He first removed one uterine horn by laparotomy and used strips of it for the determination of the control responses to the drugs. After recovery of the rabbits, and treatment with the lipid products, he removed the remaining horn, now hypertrophied, and determined its response to the same drugs in the same concentrations under identical conditions. The results were unequivocal and uniformly showed very marked increases in the

responses to pituitary extract, epinephrine, nicotine, pilocarpine, atropine, and barium. Increases up to seven times the control responses in tonus and amplitude of the contractions were obtained. In other words, Miura demonstrated with these tests a marked hyperexcitability of the smooth muscle and autonomic nerves (both the sympathetic and the parasympathetic) in the uterus. Other organs and functions were not studied, and this would be very desirable before generalizations on the possible effects on autonomic imbalance in general are permissible. Other species were not adequately tried by Miura. The cats that were used gave results which could not be used. Although the results obtained are not transferable directly to man, yet they point the way to promising studies of the vexed problem of sex gland products. As far as they go, they sustain remarkably well the suspicion that sex gland products exert some of their effects by changes in other functions besides the sex function itself. The results suggest indeed a basis for the therapeutic benefits of such products, namely, a corrective influence on autonomic nerve function.

It would be premature to assign the rôle of specificity to the ovarian and placental lipoids used in Miura's work. Controls with muscle and other organ extracts are desirable. In fact, the effects of the various lipoids themselves should be determined, especially of cholesterol, that ubiquitous substance already under suspicion in many physiological functions and pathological alterations.

Miura: Arch. exp. Path. Pharm., 1926, 114:348. "Der Einfluss der Plazenta—und Ovariumlipoide auf die Giftempfindlichkeit des Uterus."

Herrmann: Monatsschr. f. Geburts. u. Gynäkol., 1925, 41:1. "Ueber eine Wirksame Substanz im Eierstocke und in der Placenta."

SUPREME COURT UPHOLDS AMERICAN DRUGS

A decision of the highest importance to every physician, pharmacist, drug manufacturer and, in fact, every user of drugs in the United States was rendered by the Supreme Court of the United States on October 11, 1926, when this highest tribunal of the nation declared that the Chemical Foundation has been acting legally and properly in the purchase of the foreign drug and chemical patents during the war, and licensing American manufacturers to produce these essential substances in this country.

The sale of the German patents to the Chemical Foundation took place during President Wilson's administration and had, without doubt, a distinct influence upon the outcome of the war, because this transfer permitted American concerns to begin at once the production of various drugs and chemicals which had theretofore been made only in Germany, and whose importation ceased with our entry into the war.

President Harding, apparently laboring under some misapprehension as to the purposes and functions of the Chemical Foundation, directed that suit be brought by the Government to set aside the sale of these patents to the foundation.

The case was first tried in the Federal District